



## Modern Surgical Treatment of Ventral Hernias in Patients with Morbid Obesity and Abdominopotosis

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**Abstract:** Obesity has become more widespread throughout the world today. The World Health Organization (WHO) has recognized obesity as a new non-communicable "epidemic of the 21st century". In Uzbekistan, at least 20% of the able-bodied population is overweight and obese, and these figures tend to increase. Obesity is the cause of many serious diseases that significantly increase the risk of premature death. Obesity-related diseases cause significant material costs for treatment.

**Key words:** obesity, ventral hernia, abdominopotosis.

**Introduction.** Currently, the most common is the classification of overweight, based on the definition of the so-called body mass index (BMI) or Kettle's index, adopted by the International Obesity Task Force (IOTF), is the ratio of weight in kilograms to the square of height in meters. The ideal BMI value is 18.5-24.9 kilograms/meter." Obesity proper is preceded by a condition labeled as overweight with a BMI range of 25 kg/m<sup>2</sup> to 29.9 kg/m<sup>2</sup>. This has an increased risk of comorbidities compared to the population average. A BMI of 30-34.9 kg/m<sup>2</sup> is classed as grade I obesity with a high risk of comorbidities. BMI 35.0-39.9 kg/m<sup>2</sup> characterizes the II degree of obesity with a very high risk of comorbidities, and BMI>40 kg/m<sup>2</sup> indicates the presence of obesity of the III degree or morbid obesity with an extremely high risk of comorbidities and, as a rule, already present in the patient. Some authors also distinguish super obesity, with a BMI greater than 45 kg/m<sup>2</sup>. BMI over 30 kg/m<sup>2</sup> indicates the presence of obesity, but some researchers [12,15] do not agree that all people with a BMI of 25-27 kg/m<sup>2</sup> are overweight. Such BMI may be due to constitutional features (pronounced hyperstenics), good development of musculature. As is known, the mass of the same volume of muscle and adipose tissue will be different, muscle tissue is heavier. Therefore, other classifications are being discussed, particularly those based on the definition of total fat mass and abdominal fat mass [1,5,21].

Abdominal obesity is an independent etiologic factor in the formation of anterior abdominal wall hernias. This is due to the fact that in obesity the muscles of the anterior abdominal wall are atrophic and flabby. Masses of fat under the action of gravity and due to loose connection with the aponeurosis slide down, forming a thick skin and fat apron, the constant load from which leads to degenerative changes in the muscles and overstretching of aponeurotic and fascial layers [8,14,25]. Back in 1950. A.P. Krymov distinguished 2 groups of causes leading to the occurrence of hernias of the anterior abdominal wall. The first group is factors that somehow increase intra-abdominal pressure and the second group is factors that weaken the anterior abdominal wall. Obesity can be categorized as either

the first or the second group. According to the data of the study conducted in our days, there is a statistically significant increase in the incidence of recurrent ventral hernia depending on body weight.

According to the classification of prolapse of the tissues of the anterior abdominal wall (abdominoptosis) in the standing position according to A. Matarasso distinguish the following degrees:[1,9,22]

I degree (minimal) - stretching of the skin without formation of a skin-fat fold;

II degree (medium) - formation of a small skin-fat fold, which clearly hangs down in the "diver" position;

III degree (moderate) - skin-fat apron within the flanks, hanging in an upright position, "pinch" less than 10 cm;

IV degree (pronounced) - skin-fat apron within the lumbar region, "pinch" more than 10 cm, combined with skin-fat folds in the sublumbar regions.

Skin-fat "apron" in obese patients is singled out by some researchers as an independent cause of primary ventral hernia formation, because it creates a constant static load on the aponeurosis. In combination with the initial increased IAP, it creates a greater load on the aponeurosis sutures after surgery. This leads to their rupture and hernia formation [6,14,24].

Thus, obesity, being a frequent companion of patients with postoperative hernias, on the one hand, predisposes to hernia formation, on the other hand, it progresses at its appearance. A kind of vicious circle is created: obesity forms a hernia, reduces the patient's already low physical activity, which, in turn, contributes to weight gain, increasing the degree of obesity and worsening the course of comorbidities. All this significantly and progressively worsens the quality of life of patients: social adaptation, work capacity, ability to serve themselves, depression up to suicidal attempts are observed [9,13,19].

Having got rid of morbid obesity associated diseases (including hernia), patients return to active life, acquiring the state of psychological comfort lost many years ago [5,20]. Their quality of life improves, and there is hope for weight loss.

Today in the literature, most authors do not single out obese patients in herniologic surgeries as a separate category. It is necessary to realize that obesity is one of the causes of hernia formation. A certain concept of prevention of POVH in obese patients is required. Skin and fat apron, often present in obese patients, is not only a cosmetic defect. It causes a high frequency of postoperative local complications [1,3] and is an independent cause of ventral hernia formation. Its presence limits physical activity, complicates hygienic care of the body, leads to maceration of the skin, pyoderma, which causes discomfort and even suffering and significantly reduces the quality of life. Ballast "hanging abdomen" in combination with hernia protrusion can lead to a specific orthostatic syndrome, manifested by low back pain, urinary incontinence. In the saggy skin fold, as a rule, due to persistent diaper rash, skin maceration, there is a tendency to lymphothrombosis with subsequent malignization of the skin. Trophic disorders, persistent inflammation can be explained by a decrease in the number of capillaries per unit of tissue mass and microcirculation disorders in the area of the postoperative wound, which is less frequent in patients with normal body weight [4,16,21].

Modern requirements to hernia surgery are not limited to the elimination of hernia defect only. It is desirable that the surgery of ventral hernias seeks to solve the problems of aesthetic nature. Damage to the appearance of the abdomen imprints on the character of a person, affects his personal life, professional and social functions [3,13,24].

Currently, dermatolipectomy (DLE) as an independent operation and as a stage of abdominoplasty is quite common in plastic surgery. Wide mobilization of the skin-fat flap allows to assess the state of tissues around the aponeurosis defect, to identify additional hernia gates and weak areas. But the attitude to DLE, performed simultaneously during herniorrhaphy, among surgeons is ambiguous. Many agree with the statement that obesity is a dominant factor in the development of postoperative hernias and only a few note the need to remove in ventral herniorrhaphy skin and fat apron. Some surgeons agree that the use of DLE in patients with POVH and obesity improves the course of the postoperative period, reduces the number of complications and gives better immediate and long-term results. As the integrity of the aponeurosis is restored and the silhouette of the figure is improved, relative comfort is created without eliminating the underlying cause of obesity.

But there is another point of view. Subcutaneous fatty tissue is very sensitive to any trauma, so opponents of DLE, performed simultaneous with hernioplasty, explain their position by a significant increase in the incidence of local complications - hematomas, infection, necrosis. In all methods of DLE as a stage of abdominoplasty it is supposed to perform a significant detachment of the skin and fat tissue, which leads to complications. Some authors consider the presence of scars of the anterior abdominal wall in combination with excessive subcutaneous fat layer as contraindications to the DLE performance, because it provides inadequate blood supply of the excised flaps and creates prerequisites for the occurrence of marginal necrosis.

At the same time, others proved by their studies that additional DLE in combination with other types of surgical intervention do not increase the number of local complications.

**Conclusions:** Thus, it is obvious that so far there is no unanimity among surgeons in choosing the method and volume of surgical intervention in overweight and obese patients with postoperative and recurrent ventral hernias. In addition to the development of a unified concept, the following tasks are relevant: not only to perform GP in an obese patient without recurrence, but also not to neglect the aesthetic component. In this regard, optimization and development of surgical treatment algorithms for this category of patients is necessary.

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